REMARKS

Claims 1-22 are pending in the present application. Claims 1-2, 4, 6, 9-13, 15 and 21-22 have been amended and claims 8 and 19 have been canceled without prejudice, leaving claims 1-7, 9-18 and 20-22 for consideration upon the entry of the amendment. Support for the amendments can be found in the entire specification.

Specification Objection:

The Examiner states that the title of the invention is not descriptive.

The title "WRITE-BEFORE-READ INTERLOCK" has been amended to recite "SYSTEM AND METHOD FOR HOLDING UP R-UNIT OPERANDS BY USING WRITE-BEFORE-READ INTERLOCK. The amended title is believed to be clearly indicative of the invention to which the claims are directed. Thus, withdrawal of the specification objection is respectfully requested.

Claim Objections:

Claims 1, 4, 6, 8, 9, 15 and 19 were objected to for informalities. Since claims 8 and 19 have been canceled without prejudice, the objection of claims 8 and 19 is moot.

The limitation "said determining a valid match" of line 9 in claim 1 has been amended to recite "said determining produces a valid match.".

The limitation "an R-unit register addresses" in claims 4 and 15 has been amended to recite "said R-unit register addresses".

The limitation "a valid R-unit register addresses" in claim 6 has been amended to recite "valid R-unit register addresses".

The limitation "said interlocks" in claim 9 has been amended to recite "said one or more write-before-read interlocks".

Claims 1, 4, 6, 9 and 15 are believed to be allowable. Thus, withdrawal of the claim objections is respectfully requested.

Claim Rejections under 35 USC § 112

Claims 1-11, 21, and 22 were rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Since claim 8 has been canceled without prejudice, the

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objection of claim 8 is moot.

The limitations "A method for holding up R-unit operands for a minimum number of cycles until all prior updates have completed by comparing addresses in at least one queue and interlocking valid R-unit register address matches, in lines 1-3 of claim 1, have been amended to recite "A method for holding up operands of R-unit registers for a minimum number of cycles until all prior updates have completed by comparing addresses of said R-unit registers in at least one queue and interlocking valid matches of said R-unit register addresses". The limitations clearly describe that the addresses in line 2 are the same as the R-unit register addresses in line 3 and that the operands are the content of the R-unit registers. Thus, claim 1 is believed to be allowable under 35 U.S.C. 112, second paragraph.

Further, the limitation "said write queue", in line 1 of claim 10 and in line 2 of claim 11, has been amended to recite "a write queue", as suggested by the Examiner. Claims 2-7 and 9-11 depend on claim 1, and thus are believed to be allowable due to their dependency on claim 1.

The limitation "said updating" in line 1 of claim 21 has been amended to recite "it is allowed for said R-unit register addresses to accumulate in said write queue", as suggested by the Examiner. Thus, claim 21 is believed to be allowable.

The limitation "said R-unit" in line 1 of claim 22 has been amended to recite "said R-unit registers" cited in line 9 of amended claim 1. Thus, the limitation has a sufficient antecedent basis.

Withdrawal of the claim rejections is respectfully requested.

Claim Rejections -35 USC § 102

Claims 1-3, 5-6, 7-10, 12-14, 16, and 19-21 were rejected under 35 U.S.C. 102(b) as being anticipated by Edmondson et al, US 5,471,591 (hereinafter "Edmondson"). Since claims 8 and 19 have been canceled without prejudice, the rejection of claims 8 and 19 is moot.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, "[t]he identical invention must be shown in as complete detail as is contained in the * * * claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). However, Edmondson does not disclose or teach each and every element as set forth in claim 1.

The method of claim 1 compares R-unit register addresses and implements

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write-before-read interlocks until the compare is no longer active, thereby minimizing the number of cycles for updating operands of the R-unit registers during prefetching of the operands. Edmondson discloses a register scoreboard scheme for preventing register access conflicts between the fetching of register operands for instruction execution and the retiring of register destination operands in which a current instruction is stalled prior to its issue when a write-pending bit is set. However, Edmondson does not disclose or teach the limitation: implementing one or more write-before-read interlocks after said determining produces a valid match, said one or more write-before-read interlocks being implemented until said comparing is no longer active, whereby operands of R-unit registers are updated during a operand prefetching period with a minimum number of cycles, as claimed in claim 1. Thus, Edmondson does not anticipate or render obvious claim 1. Claims 2-3, 5-6, 7 and 9-10 depend from claim 1, and thus are believe to be allowable do to their dependency on claim 1.

Claim 12 includes the limitation: a plurality of write-before-read interlocks that are implemented after valid matches of said R-unit register addresses are determined, said write-before-read interlocks being implemented until said comparing is no longer active, whereby operands of R-unit registers are updated during a operand prefetching period with a minim number of cycles, which is not disclosed or taught by Edmondson for at least the reasons given for claim 1. Thus, Edmondson does not anticipate or render obvious claim 12. Claims 13-14, 16 and 20-21 depend from claim 12, and thus are believed to be allowable due to their dependency on claim 12.

Claim Rejections -35 USC § 103

Claims 4, 11, 15, 17, 18, and 22 were rejected under 35 U.S.C. 103(a) as being unpatentable over Edmondson in view of Hennessy.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927

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U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996). However, both Edmondson and Hennessy do not teach or suggest all the limitations of claim 1.

Hennessy does not teach or suggest the limitation: implementing one or more write-before-read interlocks after said determining produces a valid match, said one or more write-before-read interlocks being implemented until said comparing is no longer active, whereby operands of R-unit registers are updated during a operand prefetching period with a minim number of cycles, as claimed in claim 1. Thus, Hennessy does not cure the deficiency of Edmondson. Accordingly, the combination of Edmondson and Hennessy does not render obvious claim 1. Claim 12 is believed to be patentable over the combination for at least the reasons given for claim 1. Claims 4 and 11 depend from claim 1, and claims 15, 17-18 and 22 depend from claim 12. Thus, these dependent claims are believed to be allowable due to their dependency on claims 1 and 12.

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Conclusion

In view of the foregoing, it is respectfully submitted that the instant application is in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and a Notice of Allowance issued. If the Examiner believes that a telephone conference with Applicant's attorneys would be advantageous to the disposition of this case, the Examiner is cordially requested to telephone the undersigned.

In the event the Commissioner of Patents and Trademarks deems additional fees to be due in connection with this application, Applicant's attorney hereby authorizes that such fee be charged to Deposit Account No. 09-0463.

Respectfully submitted,

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